

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions of claims in the application.

1. (Currently amended): A reduction device of an industrial robot comprising:
a robot base installed in an XY plane of XYZ orthogonal coordinates;
a rotating barrel portion rotatably attached to the robot base;
a lower arm of which one end is axially supported by the rotating barrel portion via a front/rear shaft, pivoting back and forth to the robot base around the front/rear shaft;
a large gear fixed to the robot base, and
a small gear meshing with the large gear and axially supported in the rotating barrel portion,

wherein a rotational center of the small gear is arranged within an angular range from the rotational center of the large gear, said angular range being ±35 degrees from ~~an imaginary~~ a reference plane, and

wherein said ~~imaginary~~ reference plane is defined as a plane parallel to a lower arm rotational plane, orthogonal to the front/rear shaft, and including a rotational axis of the large gear.

2. (Currently amended): A reduction device of an industrial robot comprising:
a robot base installed in an XY plane of XYZ orthogonal coordinates;
a rotating barrel portion rotatably attached to the robot base;

a lower arm of which one end is axially supported by the rotating barrel portion via a front/rear shaft, pivoting back and forth to the robot base around the front/rear shaft; a small gear fixed to the robot base; and a large gear meshing with the small gear and axially supported in the rotating barrel portion,

wherein a rotational center of the small gear is arranged within a angular range from the rotational center of the large gear, said angular range being ± 35 degrees from ~~an imaginary~~ a reference plane, and

wherein said ~~imaginary~~ reference plane is defined as a plane parallel to a lower arm rotational plane, orthogonal to the front/rear shaft, and including a rotational axis of the large gear.

3. (Currently amended): A reduction device of an industrial robot comprising:
a robot base installed in an XY plane of XYZ orthogonal coordinates;
a rotating barrel portion rotatably attached to the robot base to rotate around a rotating shaft;
a lower arm of which one end is axially supported by the rotating barrel portion;
an upper arm of which one end is axially supported by other end of the lower arm;
a large gear fixed to the lower arm; and
a small gear meshing with the large gear and axially supported in the rotating barrel portion,

wherein a rotational center of the small gear is arranged within an angular range from the rotational center of the large gear, said angular range being ± 35 degrees from an imaginary a reference plane, and

wherein said imaginary reference plane is defined as a plane parallel to a rotating barrel portion rotational plane, orthogonal to the rotating shaft, and including a rotational axis of the large gear.

4.-5. Canceled.

6. (Previously presented): The reduction device of an industrial robot according to any one of claims 1 through 3, characterized in that a center portion of the large gear includes a communication hole.